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What's the Air
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MEASURING AIR QUALITY

THE POLLUTANT
STANDARDS INDEX

HOW'S THE AIR?

Air quality in the Bay Area is generally good — thanks in large part to pollution control efforts by businesses and to improvements in auto exhaust technology over the past two decades. Among metropolitan areas in the United States, the Bay Area ranks near the top for clean air.

In 1969, the Bay Area exceeded the federal air quality standard for ozone 65 times. Nearly 25 years later, that number has been cut by over 95 percent — to a total of 2 “unhealthful” days in 1992. The Bay Area has not had a smog alert since 1983, and peak ozone levels in 1992 were the lowest ever recorded.

However, there are still 20 to 25 days during the summer months when ozone concentrations exceed state health standards, and a handful of winter days when carbon monoxide and particulate matter levels are potentially unhealthful.

MEASURING AIR POLLUTION

The Air District uses the federal Pollutant Standards Index (PSI) to provide Bay Area residents with daily air quality measurements. The PSI translates pollution levels measured at the District’s monitoring stations into a number with a description such as “good,” “moderate” or “unhealthful.”

When air quality is deemed “unhealthful,” residents may wish to modify their activities, avoid vigorous exercise, or take other temporary measures to protect their health.

WHAT THE NUMBERS MEAN

The Pollutant Standards Index charts the community’s air quality on a scale of 0 to 500. The federal, health-based standard set for each air pollutant is calibrated to correspond to a reading of 100 on the PSI chart. For example, the federal standard for ozone is 12 parts per hundred million (pphm) and the carbon monoxide standard is 9 parts per million (ppm): both values are assigned a mark of 100 on the PSI.

If a PSI reading is below 100, adverse health effects are not expected in the general public. But if the PSI exceeds 100, air quality is classified as “unhealthful” and can be a problem especially for young children, senior citizens, athletes and people with pre-existing respiratory or heart conditions. Thus, affected individuals can use the PSI given in next-day air quality forecasts to plan their activities.

As the chart below shows, an ozone concentration of 6 pphm or below (in the 0-50 PSI range) is considered to be “good,” carbon monoxide levels of 4.5 ppm and below also fall in the “good” range.

BAY AREA POLLUTION LEVELS

DAILY PSI READING	Ozone (in pphm)	Carbon Monoxide (in ppm)	PM ₁₀ * (in µg/m ³)
GOOD PSI is 0 - 50	0 - 6	0 - 4.5	0 - 50
MODERATE PSI is 51 - 100	7-12	4.6 - 9.0	51 - 150
UNHEALTHFUL PSI is 101 - 199	13 - 19	9.1-14.0	151-349

*PM₁₀ is particulate matter smaller than 10 microns in diameter. By comparison, human hair varies from 30 to 130 microns.

WHAT'S IN THE AIR?

Ozone, carbon monoxide and particulate matter are three pollutants for which the Bay Area has not yet met air quality standards and for which concentrations still occasionally approach and exceed unhealthful levels.

OZONE Unlike most other pollutants, ozone is not emitted directly into the air, but rather is created when sunlight acts upon nitrogen oxides and volatile organic compounds to form smog. Cars and trucks account for about half of these smog-forming pollutants; however, residential sources such as gas mowers, aerosol spray products and other household products also produce sizable amounts of smog-forming compounds. The Bay Area's ozone "season" usually runs from April to October, when temperatures may be hot and inversion layers present.

CARBON MONOXIDE A product of incomplete combustion, carbon monoxide is emitted when all types of fuels — from gasoline to firewood — are burned. Over 70 percent of carbon monoxide in the Bay Area is caused by cars and trucks. Woodsmoke from fireplaces and woodstoves is another major source. In the Bay Area, carbon monoxide and particulate matter levels are at their highest between November and February, when cold winter inversions trap pollutants close to the ground.

PARTICULATE MATTER (PM₁₀) Particulate matter are particles found in dust, soot and smoke. Tiny particulates measuring 10 microns or less in diameter are called PM₁₀ and are of special concern because they may penetrate deep into the lungs and cause respiratory irritation or lung damage. Road and land dust, automobile exhaust, and woodsmoke are the largest sources of particulate matter.

HOW CAN IT BE HAZY EVEN WHEN AIR QUALITY IS GOOD?

The PSI readings indicate whether the air is healthy or unhealthy to breathe — but "healthy" reports do not always mean white clouds and blue skies.

Like a book and its cover, the air can't be judged by appearances alone. Particles, oxides of nitrogen and water droplets may stay suspended in the atmosphere. On days when the PSI indicates air quality is "good" to "moderate," it is still possible for these pollutants to be high enough to give the air a light brown or dull-gray haze without being high enough to create health problems.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Founded in 1955, the Air District was created to help reduce air pollution from industrial operations, open burning, motor vehicles and residential sources in the Bay Area. The Air District covers Alameda, Marin, Napa, Contra Costa, San Francisco, San Mateo, Santa Clara, southwestern Solano and southern Sonoma counties.

1 - 800 - HELP - AIR

Daily Air Quality Conditions, Forecasts, Written Material on how you can help clean the air, and the status of Burn Days.

Air Pollution Complaints	1-800-334-ODOR
Report Smoking Vehicles	1-800-EXHAUST
Public Information Office	(415) 749-4900
All Other District Calls	(415) 771-6000
Cal. Air Resources Board	(916) 322-2990
U.S.EPA (Western Region)	(415) 744-1500

CLEAN AIR IS EVERYBODY'S JOB

The Air District has over 100 regulations limiting industrial pollution. But you can help too. On the few days when air quality is poor, the Air District asks Bay Area residents to help keep pollution levels from becoming unhealthy.

"SPARE THE AIR"

During the summertime ozone season, "Spare the Air" advisories (when the PSI forecast exceeds 75) urge residents to cut back on activities that generate pollution — such as unnecessary driving, home improvements that require oil-based paints and varnishes, and the use of aerosol products.

"DON'T LIGHT TONIGHT"

During the winter, "Don't Light Tonight" requests are issued to encourage residents not to use their fireplaces and woodstoves on nights when carbon monoxide or particulate matter levels are expected to reach 80 on the PSI scale. An exception is made for EPA-certified or equivalent equipment.

HOW CAN I GET THE PSI READINGS

Each day by 4:30 p.m., the Air District reports the highest PSI reading in each of five zones and makes a forecast for the following day's air quality. The daily air quality reports are available on the District's 24-hour 1-800-HELP-AIR line. The Air District also transmits these daily readings — along with any "Spare the Air" or "Don't Light Tonight" advisories — to Bay Area newspapers and TV and radio stations.

CALL THE DISTRICT'S INFORMATION LINE
1-800-HELP-AIR
FOR DAILY AIR QUALITY REPORTS.

DAILY REPORTING ZONES



NORTH COUNTIES - the areas east of the coastal ridge in Marin, Napa, and southern Sonoma counties and the Vallejo area of Solano County.

COAST & CENTRAL BAY - the coastal areas of Marin, San Francisco and San Mateo counties as well as the areas from San Francisco to San Carlos on the Peninsula and from Oakland north to Crockett in the East Bay.

EASTERN DISTRICT - Alameda and Contra Costa counties east of the East Bay Hills ridge-line and Solano County from Fairfield south and west to Benicia.

SOUTH CENTRAL BAY - from Redwood City to Mountain View on the Peninsula and from San Leandro to the southern border of Alameda County in the East Bay.

SANTA CLARA VALLEY - Santa Clara County south of Mountain View.